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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/879,043	06/13/2001	Kazuhiko Oda	209543US0	3558

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EXAMINER

LAM, CATHY FONG FONG

ART UNIT PAPER NUMBER

1775

DATE MAILED: 03/31/2003

12

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/879,043

Applicant(s)

ODA ET AL.

Examiner

Cathy Lam

Art Unit

1775

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) See Continuation Sheet is/are pending in the application.
- 4a) Of the above claim(s) 23-37 and 39-41 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-4, 6, 8-9, 11, 13-14, 16, 18-19, 21-22, 43-45, 47-49, 51-53, 55-57, 59-70 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Continuation of Disposition of Claims: Claims pending in the application are 1,3,4,6,8,9,11,13,14,16,18,19,21-37,39-41,43-45,47-49,51-53,55-57 and 59-70.

In view of the amendment and remarks filed on Feb. 12th 2003, the 112 rejection have been withdrawn. However, the pending claims are continued to be unpatentable as following:

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3, 4, 6, 8, 9, 43-45, 47-49 and 59-60 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Shoji et al (US 4552691).

Shoji discloses an electrically conductive paste comprised of 60-90 wt% of metal or metal compound particles and a solvent (col 3 L 43-46).

The metal particles are dispersed into the solvent by using a surfactant (col 3 L 26-28, L 34-36). The metal particles have an average particle size of 0.5-5.0 μm (col 2 L 45-47).

Shoji states that the surfactant is added to improve the dispersibility of the metal particles (col 3 L 35-36). Shoji implicitly stated the amount of the vehicle (or organic solvent) (col 3 L 58-65).

The examiner takes the position that surface active agent is a surfactant, for it is well known to be used to improve particles dispersibility. The examiner also takes the position that with the presence of surfactant, the metal particles are taken as undried particles when mixing with the solvent.

Art Unit: 1775

Furthermore, claims 43 and 47 have intended use language, the fact that "an organic component in said conductive paste" is immaterial, the examiner does not take such "organic component" as part of the composite substance.

3. Claims 11, 13, 14, 16, 18, 19, 21, 22, 51-53, 55-57, 63-64, and 67-68 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Shoji et al (US 4552691).

Shoji discloses a conductive paste that is used to form conductive pattern on a ceramic substrate. The conductive paste is comprised of metal and metal compound particles, surfactant, organic solvents and organic binder (col 5 L 12-26).

The metal particles are dispersed into an organic solvent through the use of an surfactant, followed by mixing with a vehicle component which comprises two solvents (ie. terpineol and butyl-carbitol) and an organic binder (ie. ethylcellulose) (col 5 L 23-26).

4. Claims 1, 3, 4, 11, 13, 14, 21, 43-45, 51-53, 59-60, 63-64, 67 and 68 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Burn (US 4766927).

Burn also discloses a conductive paste comprised of metal particles, a solvent, and a surfactant. The conductive paste is used to form electrodes in a ceramic structure.

The metal particles have a size of about 1 μ m. the surfactant is used to improve dispersibility of the metal particles (col 5 L 35-39).

The conductive paste has a metal loading of 55 wt% and 45 wt % of organic medium which comprised of a resin binder and a solvent (col 9 L 21-25).

The solvent is a terpineol and the binder is n-butyl methacrylate polymer (col 5 L 36-37). The examiner takes the position that the second solvent does not exist since it is claimed as an optional component.

5. Claims 6, 8, 9, 16, 18, 19, 22, 47-49, 55-57, 61, 62, 65, 66, 69, and 70 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Burn (US 4766927).

Burn discloses a conductive paste which is used to make electrodes in a ceramic structure. Burn teaches copper particles but silent about using metal compound particles.

One skill in the art would choose a desired material for the metal powders in the conductive paste because a metal compound is an obvious variant of a pure metal.

Response to Arguments

The arguments raised in the remarks filed on Feb. 12th 2003 have been fully considered but not persuasive.

Applicant in the remarks argues that both Shoji and Burn use dried metal powders, whereas the present invention uses undried metal powders.

In respond to the above argument, both Shoji and Burn might be dried metal powders. However, as it was stated in the office action, the metal powders were treated with surfactant (or surface active agent) before the metal powders were dispersed into the solvent (Shoji col 3 L 34-36 & Burn col 5 L 37-39).

Furthermore, applicant in the product by process claims state that the water is to be replaced by the solvent. This gives an impression to the examiner that the

Art Unit: 1775

dispersibility of the metal powders in the solvent, whether it is dried or undried, would be the same because the solvent replaces the water on the surfaces of the metal powders.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cathy Lam whose telephone number is (703) 308-2418. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (703) 308-3822. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9604 for regular communications and (703) 872-9311 for After Final communications.

Art Unit: 1775

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Cathy Lam
Primary Examiner
Art Unit 1775

cfl
March 26, 2003